Ann Carroll October 29, 2012

Water, Waste and Energy Lesson Plan

**Topic:** Plants as Producers

**Grade:** 4th

**Time:** 45 minutes (10 days of observation and measuring- every other day)

**4th Grade Scope and Sequence :**

**Unit 1- Animals and Plants in Their Environment**

* LE 6.1a-d Classify populations of organisms as producers, consumers and decomposers by the role they serve in the ecosystem (food chain and food web)
* LE 6.2a, b Explore how plants manufacture food by utilizing air, water and energy from the sun.

**Common Core Standards:**

* RI.4.6 Compare and contrast a firsthand and secondhand account of the same event or topic; describe the difference on focus and information provided
* W.4.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly

**Danielson Framework:**

Domain 6- Instruction

Competency 3c- Engaging Students in Learning

**Objectives:**

* Students will be able to identify plants as producers
* Students will measure the length of the grass in the different locations
* Students will be able to compare and contrast how grass seed grow with and without sunlight
* Students will be able to identify the effects of energy and lack of energy on plants

**Introduction:**

The teacher will bring out the grass that the students grew the previous week and hold up one pot. The teacher will ask “What does this plant need in order to live?” The students will think pair and share their answers. Teacher will chart answers (water, soil, sunlight and nutrients). The teacher will then have the students make a prediction about what would happen after 8 days if they placed some grass in the closet and some in the sunlight. The students will hold a discussion using “Accountable Talk” to decide which predictions are best and why.

**Procedure:**

The teacher will introduce the students to the window farms that she made in class. (The teacher will also borrow a second from a fellow teacher). The teacher will show the students how the window farms work and explain that they will be using them for this experiment. Each table (there are 4 grouped heterogeneously) will plant 2 pots of grass, using the humus soil and grass seed. Each table will label one pot controlled and one experimental. The controlled pots will go in one window farm and in the sunlight in the classroom and the experimental pots will go in the other window farm and placed in the storage closet.

**Conclusion:**

Every 2 days for the next 8 days students will observe and measure the grass they grew in the controlled and experimental environments. After measuring the grass they will record their findings in their science workbooks. As the students are measuring and observing the grass the teacher will have a discussion with them about what is happening and why. During this time the teacher will introduce the words “chlorophyll” and “producer”. The students will write these words into their science notebooks with the definitions and examples from what they see happening in the experimental and controlled pots in the window farms. At the end of their observations and measurements the students will fill out their Venn Diagrams and write an informative report about their findings.

**Assessment:**

The students will fill out an “exit ticket” and explain what the words “chlorophyll” and “producer” mean. They can write a definition or draw a picture of what happened.